

System and Method For Medium Wide Band Communications by Impulse Radio

Abstract

A system and a method for medium wide band communications using impulse radio techniques. The method of transmitting medium wide band signals includes the steps of producing a sinusoidal signal and a train of preferably Gaussian shaped pulses. The method also includes the steps of multiplying the sinusoidal signal by the train of pulses to produce a train of sinusoidal bursts, and transmitting the train of sinusoidal bursts. The center frequency of the transmitted signal consisting of the train of sinusoidal bursts can be controlled by selecting an appropriate frequency of the sinusoidal signal. The bandwidth of the transmitted signal can be controlled by selecting an appropriate width of the pulses in the train of pulses. Information and/or coding modulation can be accomplished by adjusting the time position and/or phase of the sinusoidal bursts.